

**WITHERINGIA FOLLICULOIDES (SOLANACEAE):
A NEW SPECIES FROM COSTA RICA**

The genus *Witheringia* L'Hér. embraces about a dozen species. One species, *W. solanacea* L'Hér., is weedy in nature and ranges from northern Mexico to Bolivia. The other species tend to be more localized, and the genus seems to be best developed in mature wet forests of Costa Rica, Panama, and northern South America. *Witheringia* is a member of subfamily Solanoideae. The species of *Witheringia* are mostly shrubs or small trees with few- to many-flowered inflorescences of yellow or green flowers held under the leaves, and berries held erect above the foliage. The calyces range from minute and nonaccrescent to large and, as in the present species, completely enveloping the fruit.

***Witheringia folliculoides* D'Arcy & J. L. Gentry, sp. nov.** TYPE: Costa Rica. Puntarenas: moist forest in valley bottom, tropical wet forest with open understory on steep slopes and ridges and areas of secondary vegetation north and west of the air field 5 km W of Rincón de Osa, 50–200 m, *J. L. Gentry & Burger 2844* (holotype, MO-2825976; isotype, F).

Frutex 3–5 m altus, ramis hornotinis gracilibus, glabratis. Folia integra, elliptica lanceolatae, saepe obliqua, 9.5–23 cm longa, 2.3–7 cm lata, venis supra planis subtus elevatis, venis lateralibus 6–14 utrinque, petiolis gracilibus. Pedicelli pauci, 3–4 mm longi. Flores 5-meri, calyce parvo, 2.5–4 mm longo, glabrato, campanulato, apice truncato, in statu fructificanti magnopere accrescenti, corolla lutea, extus glabra, e tubo 2.5–3 mm longo ampliata, limbo campanulato, fauce pubescenti, lobis obtusis, 3–4 mm longis, filamentis base pubescentibus, antheris oblongis, haud apiculatis, longitudinaliter dehiscentibus. Acinus subglobosus, 12 mm longus, ab folliculo tectus, calyce in folliculum magnum maturescenti.

Small tree 3–5 m tall; young branches slender, glabrate, drying smooth. Leaves entire, drying concolorous, mostly elliptic or lanceolate, sometimes oblanceolate, often oblique, 9.5–23 cm long, 2.3–7 cm wide, apically short acuminate, basally mostly cuneate, the veins plane or slightly impressed above, sometimes drying somewhat rugose, the costs and major lateral veins elevated beneath, the lateral veins arching, 6–14 on each side; minor leaves lanceolate to broadly elliptic or rotund, 2.3–7.8 cm long, 1.4–4.2 cm wide, acute to acuminate or sometimes rounded api-

cally, cuneate to rounded basally; petioles slender, 4–9 mm long, those of the minor leaves 2–3 mm long. Inflorescence with the peduncle mostly subobsolete but sometimes 2–4 mm long and the flowers appearing fasciculate but only one or two appearing at a time; pedicels few, 1–7 (evidenced by scars), 3–4 mm long, becoming 4–7 mm long, perhaps all but one flower aborting. Flowers 5-merous; calyx campanulate, apically truncate, 2.5–4 mm long, accrescent in fruit, drying dark, minutely and sparsely pubescent with short curved simple hairs mostly on the apical portion, glabrescent, inconspicuously ribbed; corolla yellowish, apparently unmarked, glabrous outside, tubular campanulate, the tube 2.5–3 mm long, the throat pubescent with reduced hairs, the limb lobed less than halfway down, the lobes ovate, 3–4 mm long, marginally puberulent; stamens with the filaments pubescent at the base, apically glabrous, 1.5 mm long, the anthers yellow, oblong, 2 mm long, not apiculate; ovary glabrous, the style equalling the stamens, glabrous, the stigma minute. Fruit a subglobose ?juicy berry 10–12 mm across, loosely and completely enveloped by the strongly accrescent calyx; fruiting calyx rotund, much enlarged and inflated around the berry but open at the apex, apparently unribbed, glabrous, 15–20 mm across, approximately twice the length of the fruit; seeds numerous (?ca. 40), dark brown, flattened, reniform, 2–3 mm across, the testa wavy reticulate on the face, scalariform on the rim; embryo broadly horseshoe-shaped, terete throughout (lacking any notching along its length).

Paratypes. COSTA RICA. PUNTARENAS: Osa Peninsula, tropical wet forest along dry stream bed paralleling airport at Rincón, *Duke 16107* (MO); moist forest in valley bottom, tropical wet forest with open understory on steep slopes and ridges and areas of secondary vegetation north and west of the air field 5 km W of Rincón de Osa, 50–200 m, *Gentry & Burger 2842* (F, MO). Slopes adjacent to airport, disturbed primary forest, Rincón de Osa, 20–300 m, *Liesner 1887* (MO).

This species is distinct from most other species of *Witheringia* in its bladderly fruiting calyx, which loosely and completely envelops the fruit. It occurs in southern Costa Rica where a number of other species of the genus occur. It is perhaps most similar to *W. exiguiflora* D'Arcy and *W. morii* D'Arcy, which also occur in western Pan-

ama and southern Costa Rica, and which both have accrescent calyces, but their calyces do not form the large bladderlike enclosures of *W. folliculoides*. *Witheringia folliculoides* differs further from *W. exiguiflora* in its tubular campanulate corolla, in its smaller and much less coriaceous leaves, and in its larger fruiting calyx. From *W. morii* it differs in its broadly open corolla and its few-flowered inflorescences. In habitat *W. folliculoides* also differs from these two species: it occurs near sea level in the seasonally dry Osa Peninsula of Costa Rica, whereas *W. exiguiflora* and *W. morii* occur in perennially rainy forests. Both *W. exiguiflora* and *W. morii*

occur in the uplands of 1,100–1,800 m in Costa Rica and Panama, but *W. exiguiflora* also ranges down to near sea level on the Atlantic slopes of Panama.

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